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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,605	02/05/2002	Michael J. Renn	ODC2000-1-CIPB	1467
5179	7590	09/24/2004	EXAMINER	
PEACOCK MYERS AND ADAMS P C			HUFFMAN, JULIAN D	
P O BOX 26927			ART UNIT	
ALBUQUERQUE, NM 871256927			PAPER NUMBER	
			2853	

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/072,605	Applicant(s) RENN, MICHAEL J.	
	Examiner Julian D. Huffman	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-14 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/26/04, 6/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 7-11 and 17-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Thaler (U.S. 5,814,152).

Thaler discloses an apparatus comprising:

a material source means for supplying a material to be deposited (30a, column 11, lines 43-45);

an atomization means for producing a plurality of discrete particles from said material source means (laser 20, column 6, lines 10-17);

a force application means for propelling said plurality of discrete particles generally toward a substrate (laser 20, column 11, lines 55-59);

a collimation means for controlling the direction of flight of said plurality of discrete particles (laser 20, column 6, lines 10-17 and column 11, lines 55-59);

wherein said force application means comprises a carrier gas (column 5, lines 40-51, column 11, lines 55-59) and a laser (20);

wherein said collimation means comprises a means for entraining said plurality of particles in a sheath gas (laser energy);

wherein said entraining means comprises means for annularly surrounding said plurality of particles at an orifice of said collimation means (laser energy).

With regards to claims 11-14 and 17-20, Thaler discloses a method of performing the functions discussed previously in the means plus function claim limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over anticipated by Thaler in view of Ogren et al. (U.S. 4,689,052).

Thaler discloses everything claimed with the exception of a virtual impactor.

Ogren et al. disclose a virtual impactor (10) that sorts particles by size and carries the particles after sorting (column 4, line 65-column 5, line 2 and column 6, lines 60-63). Additionally, Ogren et al. does not limit the use of the virtual impactor (column 8, lines 56-60).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the virtual impactor of Ogren et al. in the invention of Thaler. The reason for doing such would have been to provide a means to control the size of the particles (column 6, lines 60-64).

Allowable Subject Matter

5. Claims 5, 6, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose multiple virtual impactors in series in the combination.

U.S. 4,132,894 to Yule discloses a multi stage virtual impactor. One having ordinary skill in the art would not be motivated to modify Thaler in accordance with Yule. There is no motivation to combine the device of Yule with that of Thaler and further Yule is concerned with monitoring radioactive materials and is nonanalogous art.

Response to Arguments

6. Applicant's argument that the laser does not collimate the direction of the particles is respectfully deemed not persuasive. The laser propels the particles towards the substrate and therefore controls the direction of flight.

Applicant's argument that Thaler is used for a different purpose than applicant's invention is respectfully deemed not persuasive. The intended use of applicant's invention is never claimed, and if it were claimed, it would have to limit the structure or method of operation of the device in order to further limit the claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571)272-2147. The examiner can generally be reached Monday through Friday from 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JH

September 21, 2004



Thinh Nguyen
Primary Examiner
Technology Center 2800